

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-20 are pending, of which claims 1, 5, 9, 12, and 18-19 have been amended. The amendments to claims 9, 12, and 18 are simply to correct informalities noted by the Office and the Applicant, and are not to overcome prior art.

Claim Objection

Claim 9 is objected to for an informality (*Office Action* p.2). An appropriate correction has been provided herein and Applicant respectfully requests that the objection to claim 9 be withdrawn.

35 U.S.C. §102 Claim Rejections

Claims 1, 4-5, and 17-19 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,297,873 to Furuya (hereinafter, "Furuya"). Applicant respectfully traverses the rejection.

Claim 1 recites a method for calibrating a printing device comprising:

(b) performing an off-media calibration to obtain off-media calibration measured values, the off-media calibration being performed by placing colorant on other than print media;

(c) making a correlation between the on-media calibration measured values and the off-media calibration measured values;

Furuya does not show or disclose performing an off-media calibration performed by placing colorant on other than print media, as recited in claim 1. Furuya describes an estimated calibration that takes into account media

characteristics, previous calibration history information, and environmental information (*Furuya* col.2, lines 21-25; col.9, lines 50-55). The previous calibration history information is based on actual printed calibration test patterns (*Furuya* col.10, lines 2-4; col.13, lines 47-53). *Furuya* does not perform an off-media calibration by placing colorant, as recited in claim 1. Accordingly, claim 1 is allowable over *Furuya* for at least the reason that *Furuya* does not show or disclose performing an off-media calibration as described in claim 1.

Furuya also does not show or disclose making a correlation between the on-media calibration measured values and the off-media calibration measured values, as recited in claim 1. *Furuya* describes a correction factor for environmental conditions, printing paper type, and previous calibration history information (*Furuya* col.10, lines 24-31). However, *Furuya* does not describe placing a colorant for an off-media calibration, as described above, and therefore can not disclose making a correlation between on-media calibration measured values and off-media calibration measured values, as recited in claim 1.

The Office contends that *Furuya* teaches a correlation ΔE_a between on-media calibration measured values and off-media calibration measured values (*Office Action* p.3). Applicant disagrees because *Furuya* describes that correlation ΔE_a pertains to a "total amount of change in the exposure amount between the last calibration and the calibration before the last one" (*Furuya* col.14, lines 45-47). The correlation ΔE_a includes factors such as temperature changes (e.g., environmental conditions) and pre-determined print paper characteristics. However, the correlation ΔE_a as described in *Furuya* is not a correlation between measured values, as recited in claim 1.

Accordingly, claim 1 is allowable over Furuya for at least the reasons described above, and Applicant respectfully requests that the §102 rejection be withdrawn.

5 Claims 4-5 are allowable by virtue of their dependency upon claim 1. Additionally, one or both of claims 4-5 are allowable over Furuya for independent reasons. For example:

10 Claim 5 recites that on-media calibration is performed "until the on-media calibration measured values are substantially equal to target measure values determined during manufacture of the printing device." Furuya does not show or disclose any such target measure values determined during manufacture of the printing device, as recited in claim 5. The Office does not cite Furuya for teaching target measure values, but only that it would be apparent to adjust print parameters based on a correction value such that

15 on-media calibration is correctly performed (*Office Action* p.4). There is no mention in Furuya of target measure values, or that target measure values are determined during manufacture of a printing device, as recited in claim 5.

Accordingly, claim 5 is allowable over Furuya and the §102 rejection should be withdrawn.

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Claim 17 recites that "the printing device makes a correlation between the on-media calibration measured values and off-media calibration measured values calculated during an initial off-media calibration cycle". As described above in the response to the rejection of claim 1, Furuya does not show or

25 disclose a correlation between on-media calibration measured values and off-media calibration measured values, as recited in claim 17.

Accordingly, claim 17 is allowable over Furuya and Applicant respectfully requests that the §102 rejection be withdrawn.

5 Claims 18-19 are allowable by virtue of their dependency upon claim 17. Additionally, one or both of claims 18-19 are allowable over Furuya for independent reasons. For example:

10 Claim 19 recites that during on-media calibration, "the printing device varies print parameters until the on-media calibration measured values are substantially equal to target measure values determined during manufacture of the printing device." Furuya does not show or disclose any such target measure values determined during manufacture of the printing device, as recited in claim 19. The Office does not cite Furuya for teaching target measure values, but only that it would be apparent to adjust print parameters based on a correction value such that on-media calibration is correctly performed (*Office*
15 *Action* p.5). There is no mention in Furuya of target measure values, or that target measure values are determined during manufacture of a printing device, as recited in claim 19.

Accordingly, claim 19 is allowable over Furuya and the §102 rejection should be withdrawn.

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35 U.S.C. §103 Claim Rejections

Claims 2, 6, 9-10, 12-13, and 16 are rejected under 35 U.S.C. §103(a) for obviousness over Furuya in view of Applicant's Specification Background (*Office Action* pp. 6 and 11). Applicant respectfully traverses the rejection.

25 Claim 3 is rejected under 35 U.S.C. §103(a) for obviousness over Furuya in view of U.S. Patent No. 6,435,654 to Wang et al. (hereinafter, "Wang") (*Office Action* p. 8). Applicant respectfully traverses the rejection.

Claims 7 and 20 are rejected under 35 U.S.C. §103(a) for obviousness over Furuya in view of U.S. Patent No. 5,649,073 to Knox et al. (hereinafter, "Knox") (*Office Action* p. 9). Applicant respectfully traverses the rejection.

Claims 8 and 14-15 are rejected under 35 U.S.C. §103(a) for obviousness over Furuya in view of Knox, and further in view of Applicant's Specification Background (*Office Action* pp. 9 and 14). Applicant respectfully traverses the rejection.

Claim 11 is rejected under 35 U.S.C. §103(a) for obviousness over Furuya in view of Applicant's Specification Background, and further in view of Wang (*Office Action* p. 14). Applicant respectfully traverses the rejection.

As described above in the response to the §102 claim rejections, Furuya does not disclose making a correlation between on-media calibration measured values and off-media calibration measured values. Furuya only describes actual calibration in which a test pattern is printed on print material, and estimated calibration that includes media characteristics, previous calibration history information, and environmental information (*Furuya* col.1, lines 50-67; col.2, lines 21-25; col.9, lines 50-55). As described in Furuya, an estimated calibration includes previous actual calibration information based on a printed test pattern (e.g., the calibration history information). Thus, a calibration in Furuya, either actual or estimated, is based at least in-part on a test pattern printed on the print material, and there are no off-media calibration measured values. Accordingly, an estimated calibration in Furuya is not determined by off-media calibration measured values, and Furuya can not then teach or suggest a correlation between on-media calibration measured values and off-media calibration measured value.

The Office cites Wang and Knox for features recited in the various claims. However, Wang and/or Knox are not cited by the Office for teaching a correlation between on-media calibration measured values and off-media calibration measured values. The Office also cites Applicant's Specification Background for teaching off-media calibration to obtain off-media calibration measured values (*Office Action* p.7; Specification p.1, lines 23-28). However, neither Applicant's Specification Background nor any of the cited references (Furuya, Wang, and/or Knox) disclose making a correlation between on-media calibration measured values and off-media calibration measured values, as described in the pending independent claims.

Claims 2 and 6 are allowable over the Furuya-Background combination by virtue of their dependency upon allowable claim 1 as described above in response to the rejection of claim 1.

Claim 3 is allowable over the Furuya-Wang combination by virtue of its dependency upon allowable claim 1 as described above in response to the rejection of claim 1.

Claim 7 is allowable over the Furuya-Knox combination by virtue of its dependency upon allowable claim 1 as described above in response to the rejection of claim 1.

Claim 8 is allowable over the Furuya-Background-Knox combination by virtue of its dependency (indirectly) upon allowable claim 1 as described above in response to the rejection of claim 1.

Claim 9 recites a self-calibrating printing device, "wherein the self-calibrating printing device makes a correlation between the on-media calibration measured values and the off-media calibration measured values."

As described above, Furuya and/or Applicant's Specification Background does not teach or suggest that a printing device makes a correlation between on-media calibration measured values and off-media calibration measured values.

5 The Office states that it would have been obvious to incorporate the calibration history data including the actual calibration data of Furuya into the off-media calibration method of Applicant's Specification Background (*Office Action* p.13). Applicant disagrees that it would have been obvious to combine off-media calibration as described by the Applicant with the calibration
10 described in Furuya because Furuya says nothing about determining measured values from off-media calibration. Further, neither Applicant's Specification Background nor Furuya disclose making a correlation between on-media calibration measured values and off-media calibration measured values. Although impermissible, the Office is relying on Applicant's disclosure to
15 substantiate a rejection of making "a correlation between the on-media calibration measured values and the off-media calibration measured values."

Accordingly, claim 9 is allowable over the Furuya-Background combination for at least these reasons and the §103 rejection should be withdrawn.

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Claims 10, 12-13, and 16 are allowable over the Furuya-Background combination by virtue of their dependency upon allowable claim 9.

Claim 11 is allowable over the Furuya-Background-Wang combination by virtue of its dependency upon allowable claim 9.

25 Claims 14-15 are allowable over the Furuya-Background-Knox combination by virtue of their dependency upon allowable claim 9 (either directly or indirectly).

Claim 20 is allowable over the Furuya-Knox combination by virtue of its dependency upon allowable claim 17 as described above in the response to the rejection of claim 17.

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Conclusion


Pending claims 1-20 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

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Respectfully Submitted,

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